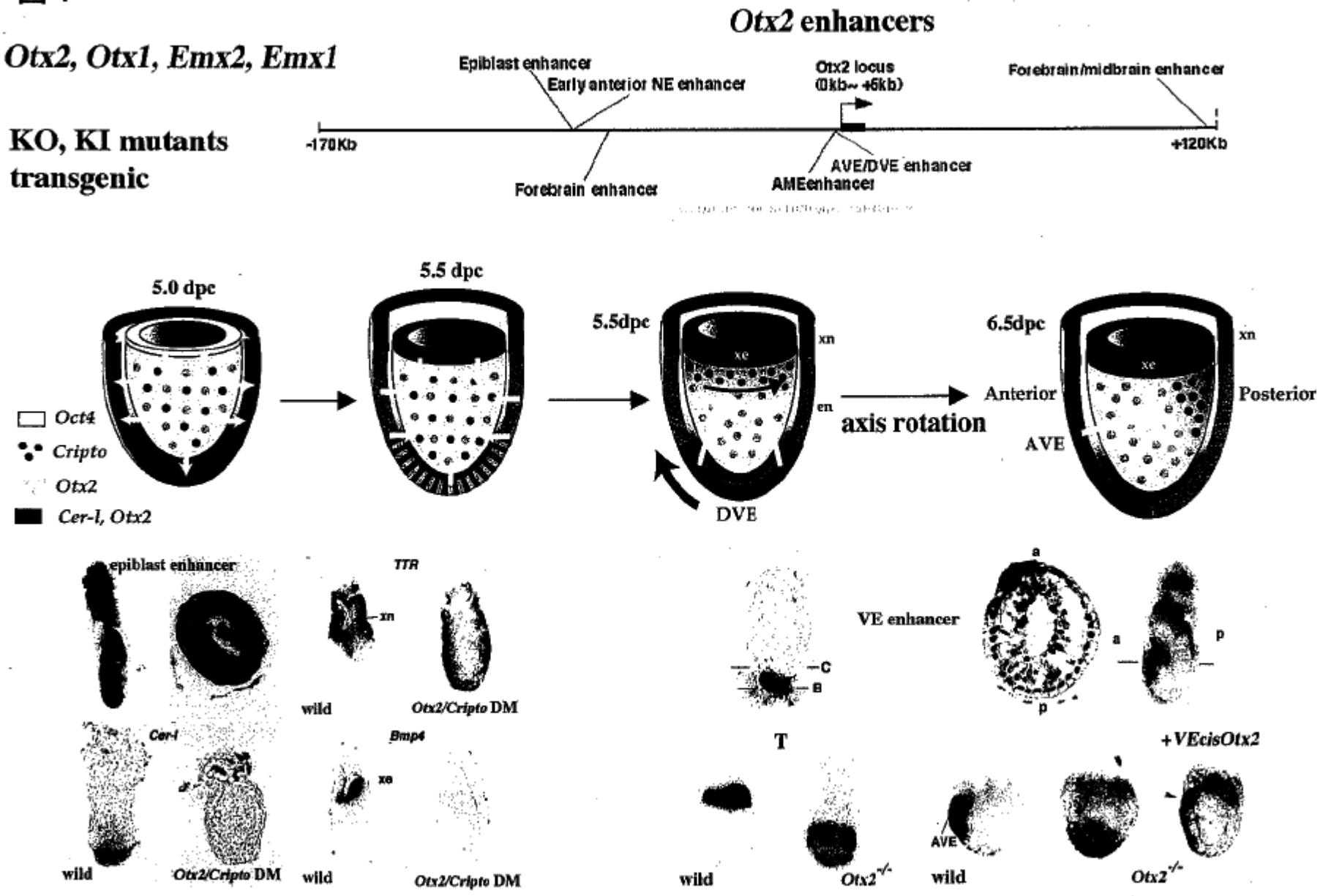
図 1

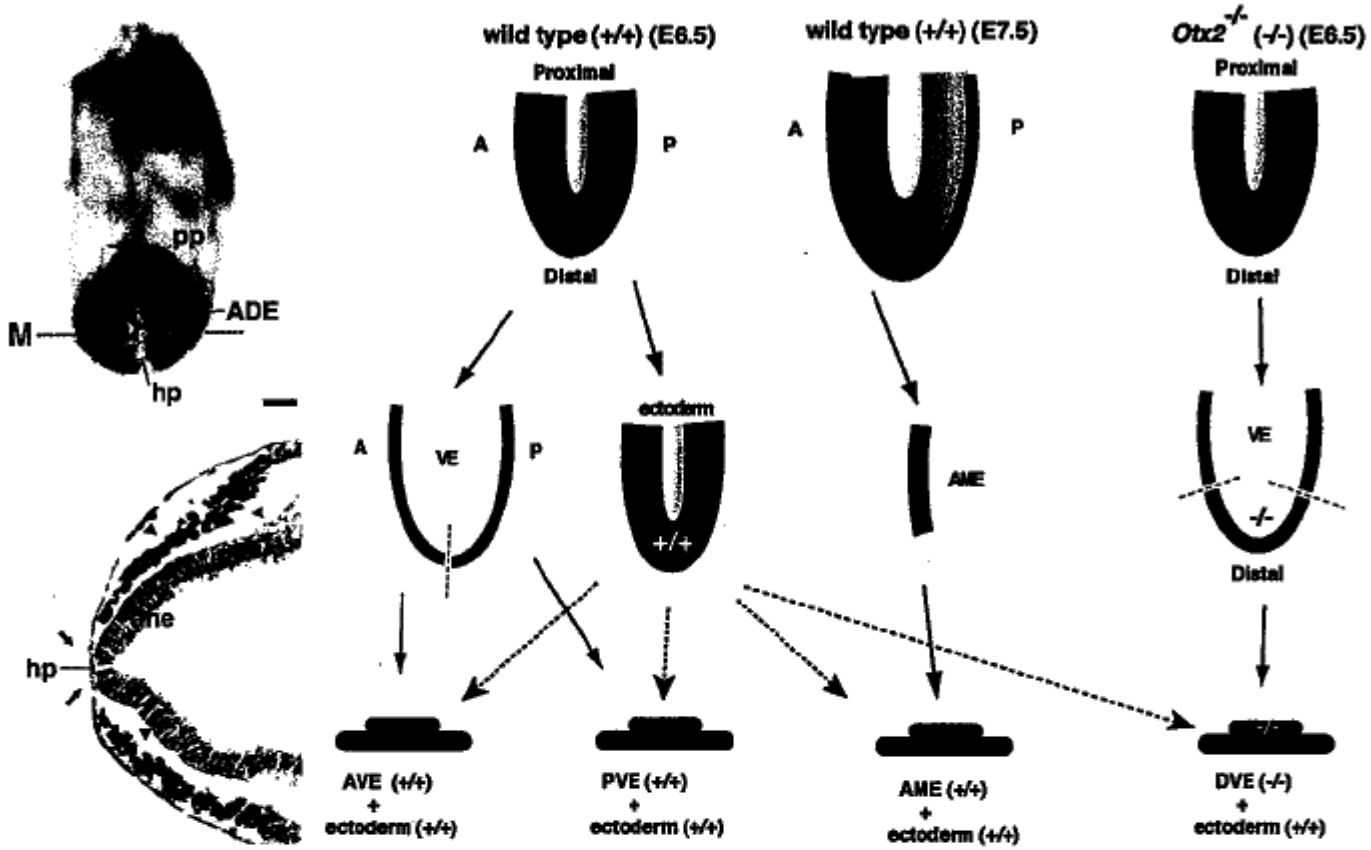
Otx2, Otx1, Emx2, Emx1

KO, KI mutants transgenic



anterior mesendoderm
enhancer: 7.5 dpc

Coculture Exp.



Two step model for anteripr neuroectoderm induction

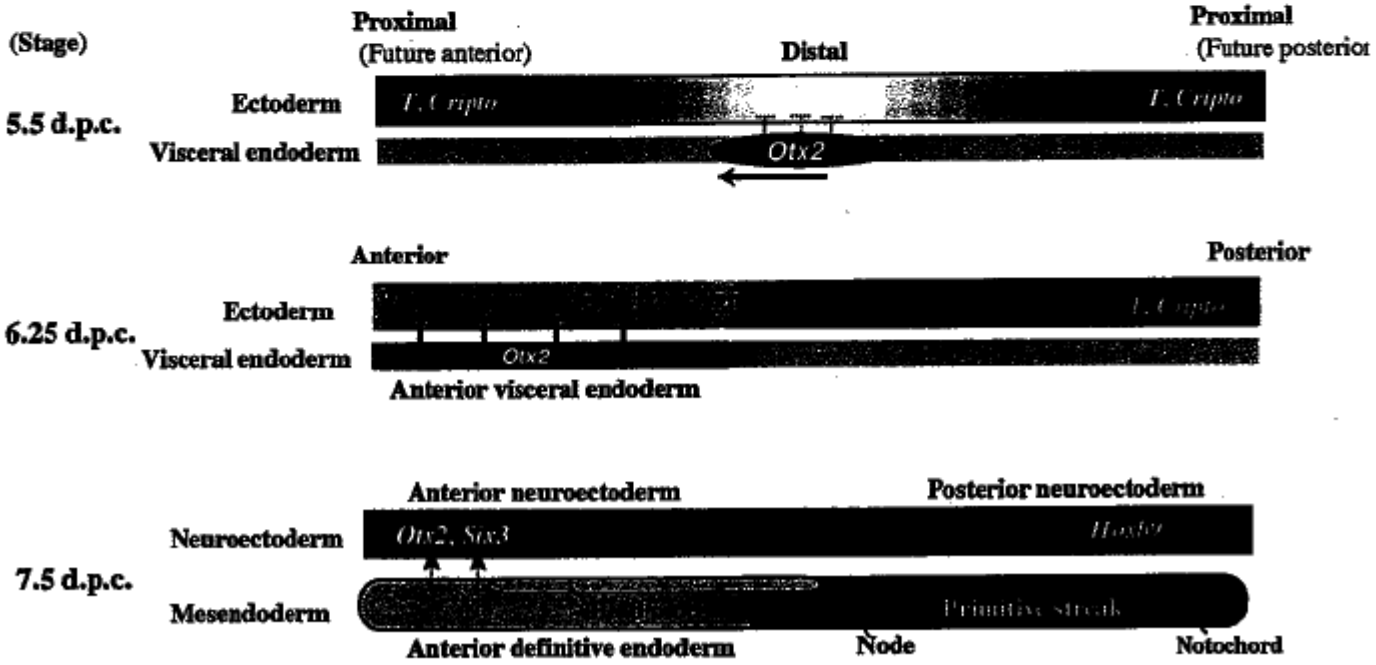


図 3

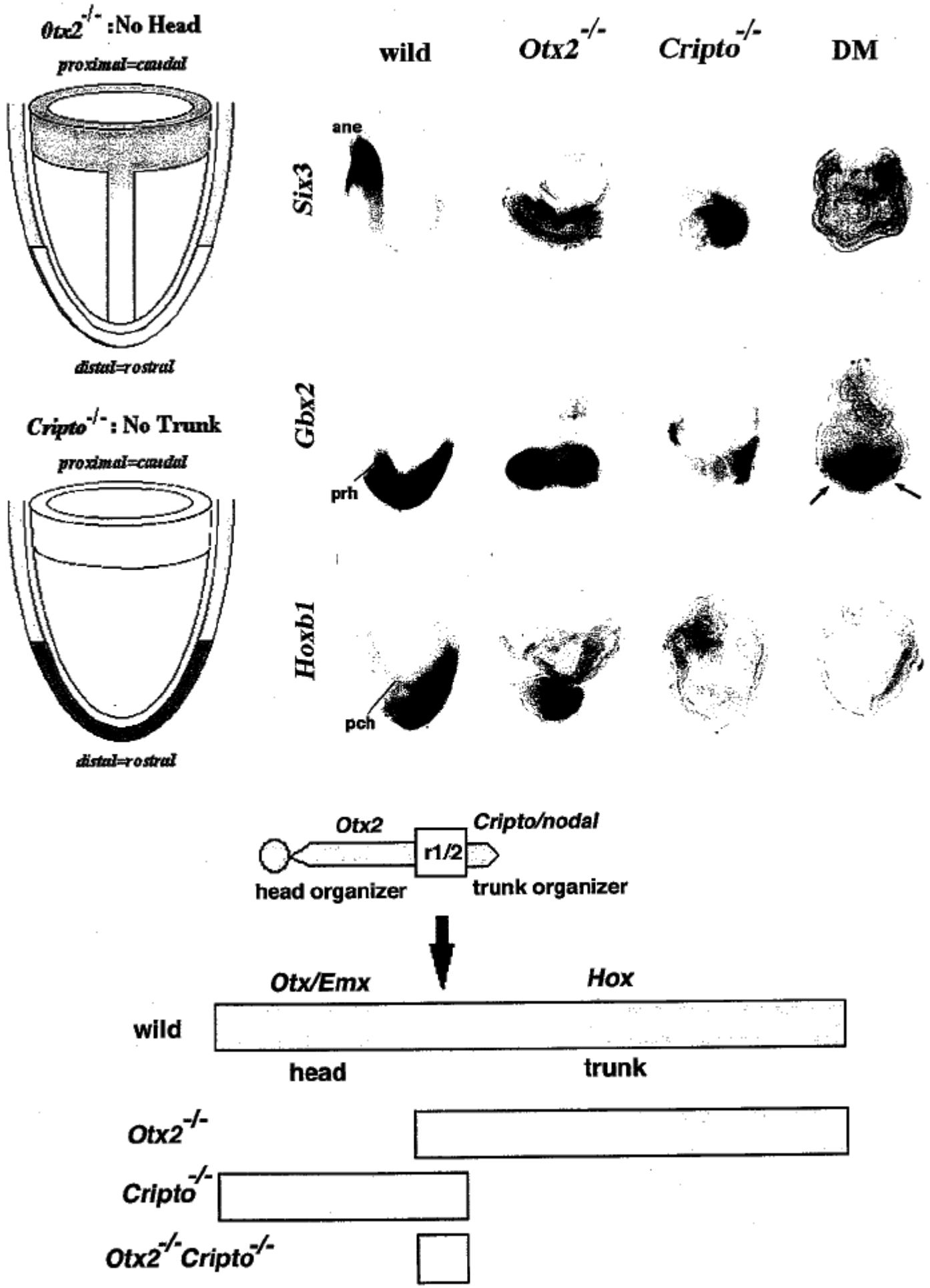
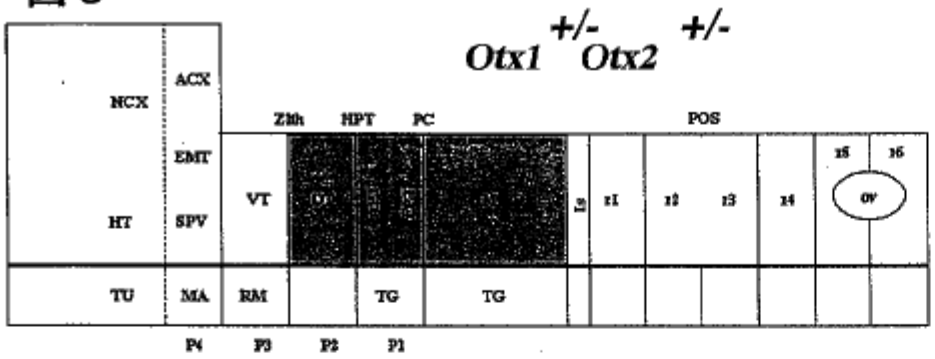
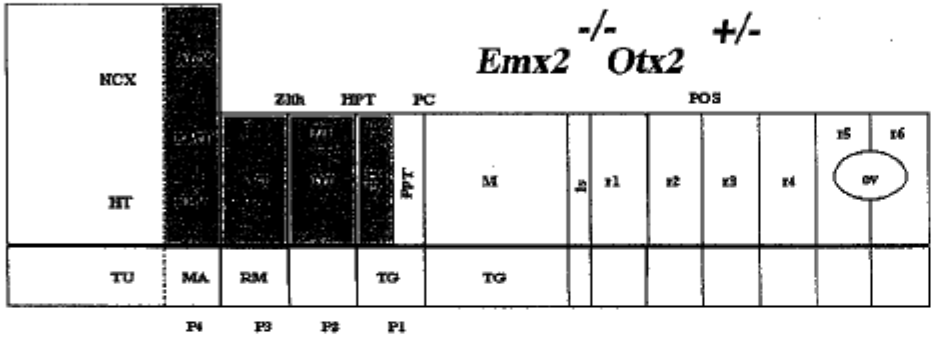

Otx2-/- :No Head
proximal=caudal
distal=rostral
Cripto-/- : No Trunk
proximal=caudal
distal=rostral
wild
Otx2-/-
Cripto-/-
DM
Six3
ane
Gbx2
prh
Hoxb1
pch
Otx2
Cripto/nodal
r1/2
head organizer
trunk organizer
Otx/Emx
Hox
wild
head
trunk
Otx2-/-
Cripto-/-
Otx2-/-Cripto-/-

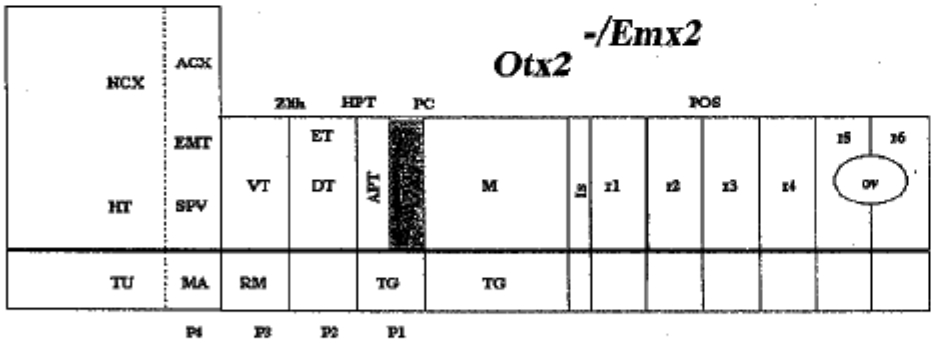
図 4

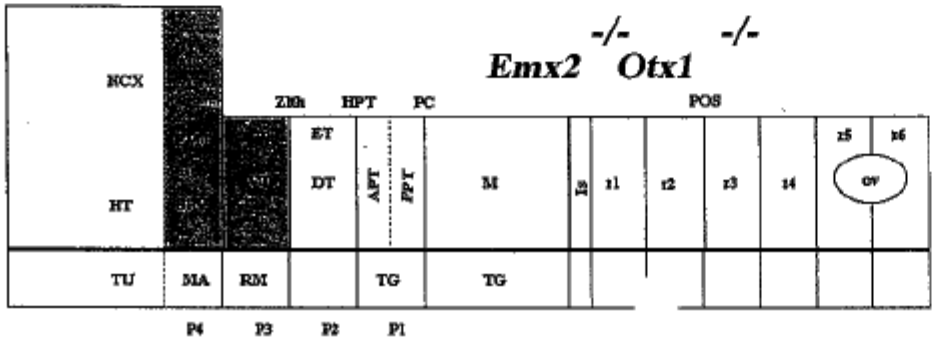
anterior neuroectoderm enhancer
8.0 dpc
9.0 dpc
9.5dpc
wild
mutant
7.75 dpc
Fkh2
9.5 dpc
Emx2
di
me
t
Otx2
Otx1
Emx2
Emx1

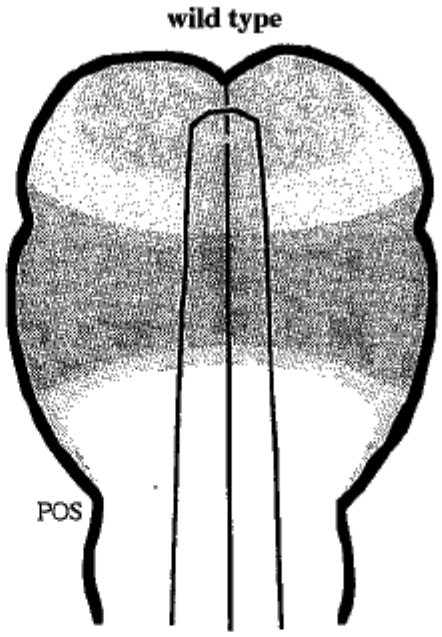
図 5



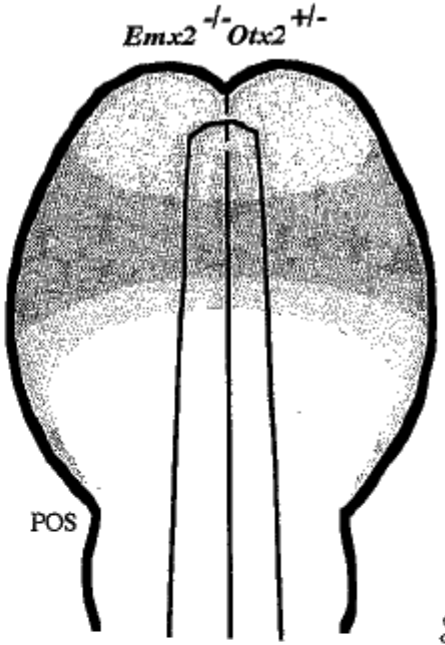


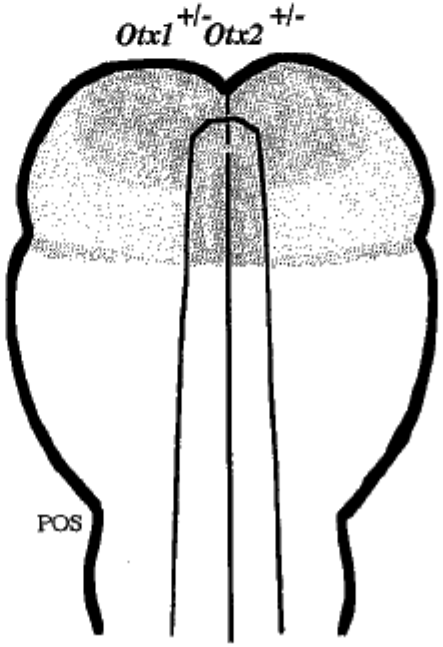






Otx2
Emx2
Pax2





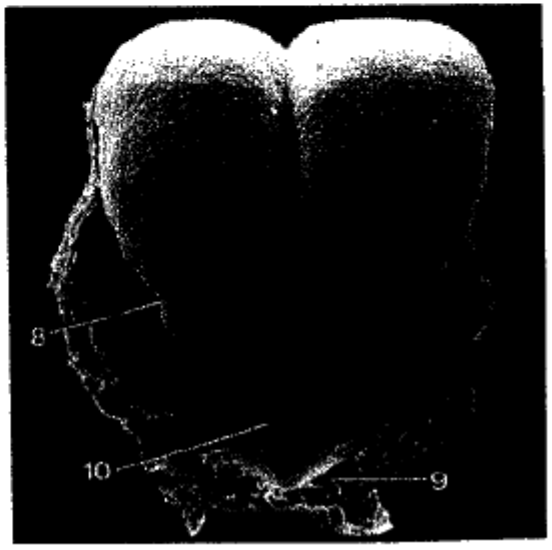
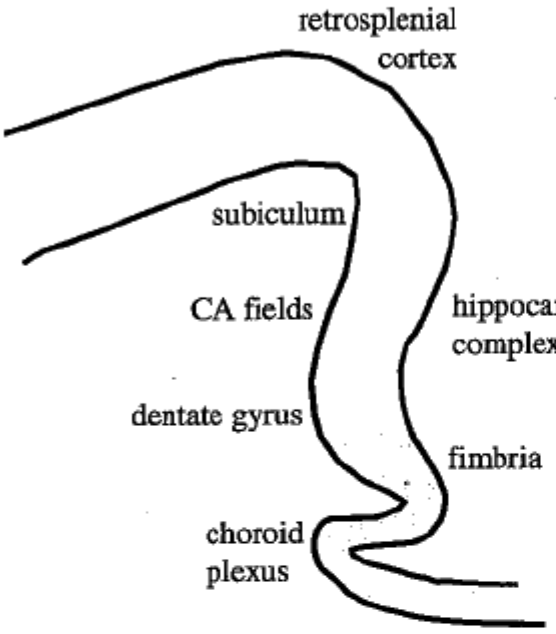


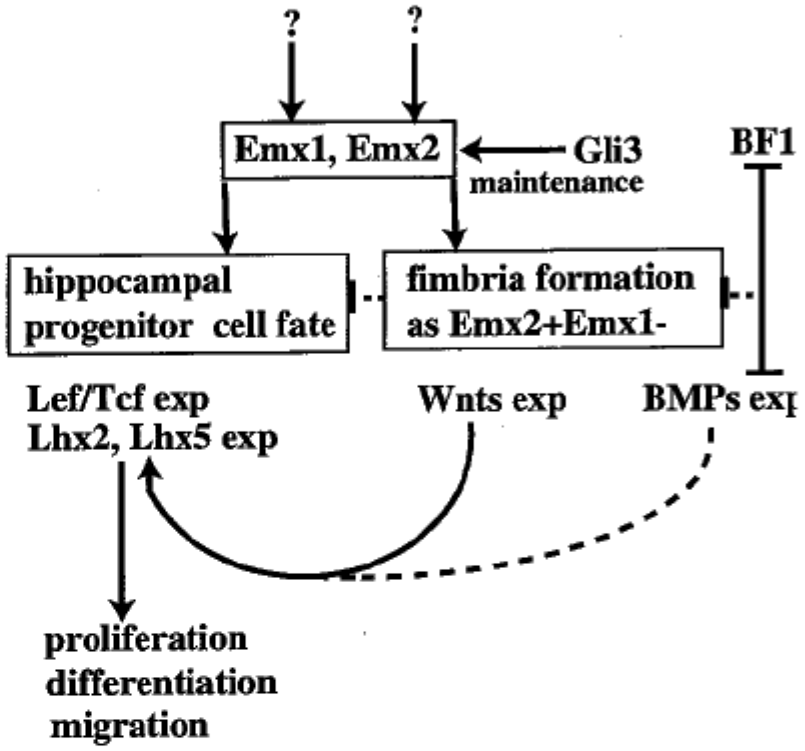
図 6

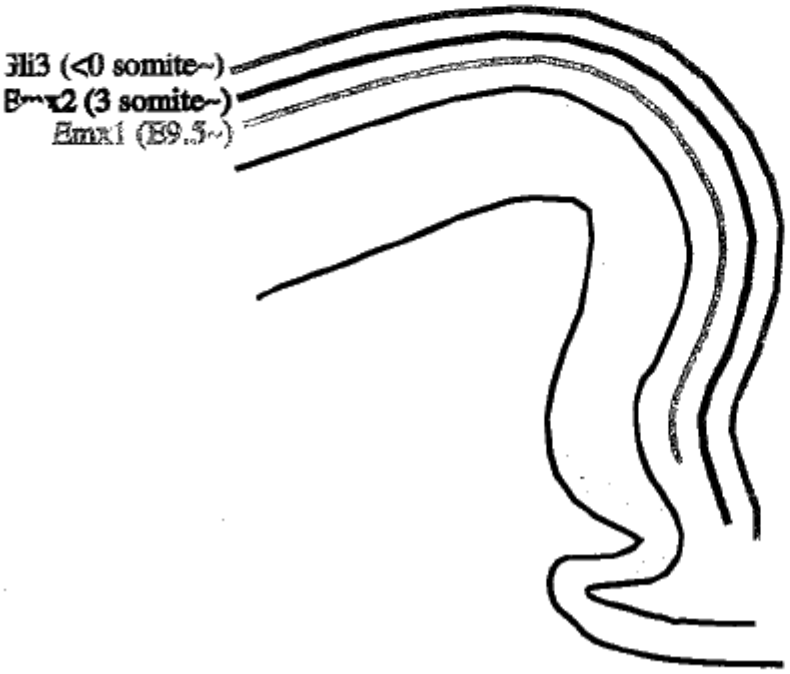
Emx2/Otx2 → **territory for archipallium and diencephalon at 3 somite stage (E8.0**

Emx2/Otx1 → **?**

Emx1/Emx2 → **progenitor cell fate for archipallium at E9.5**







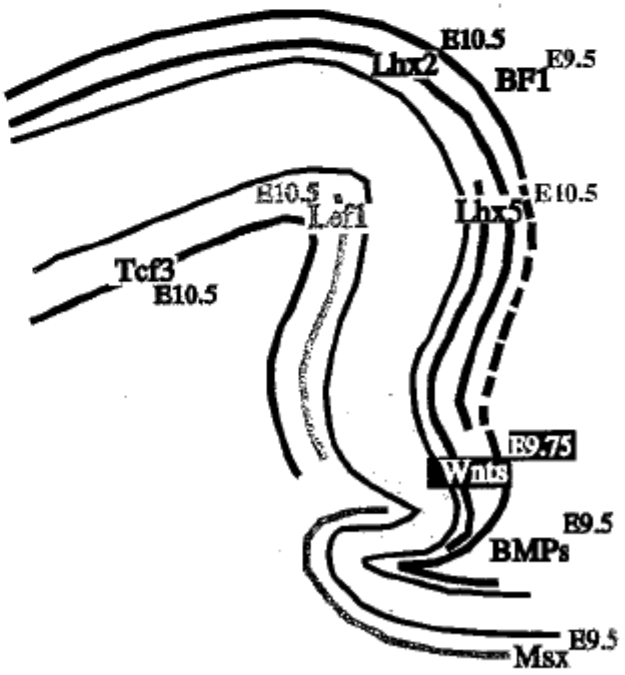
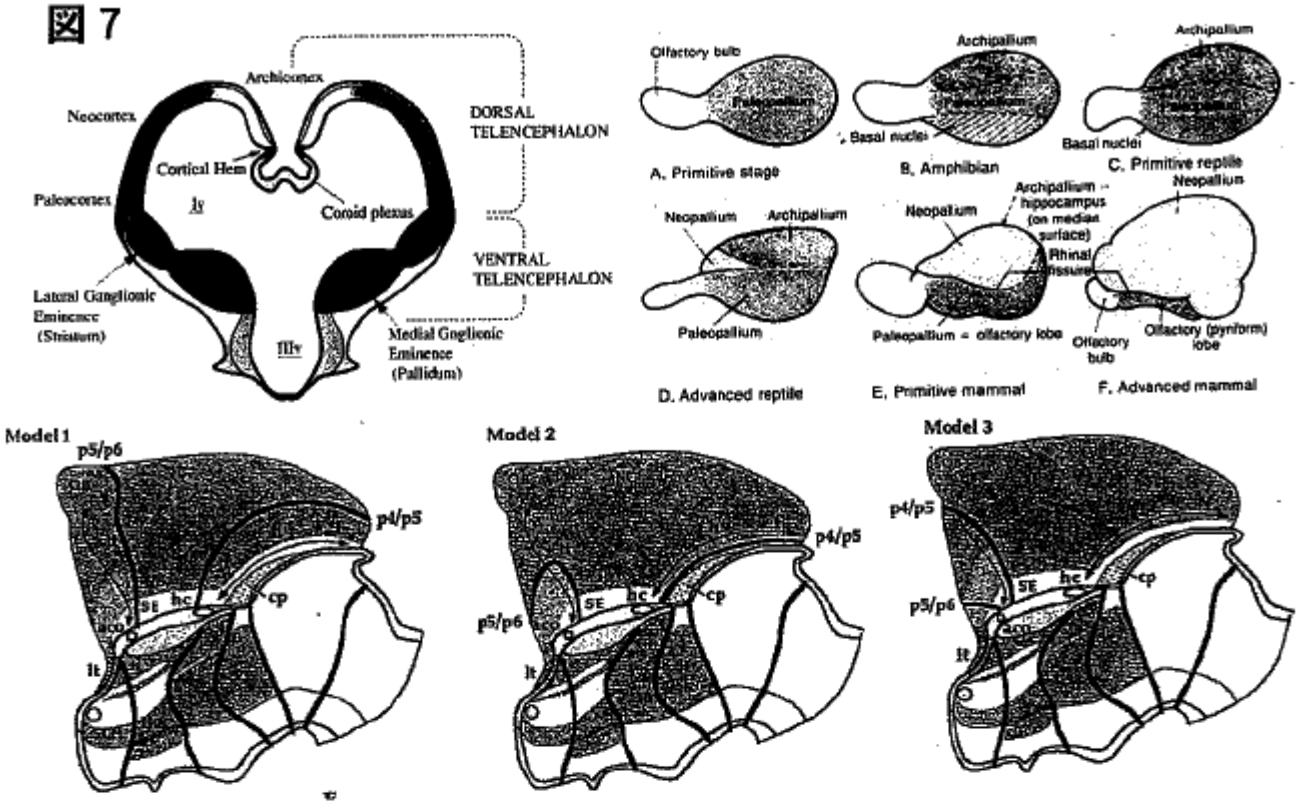
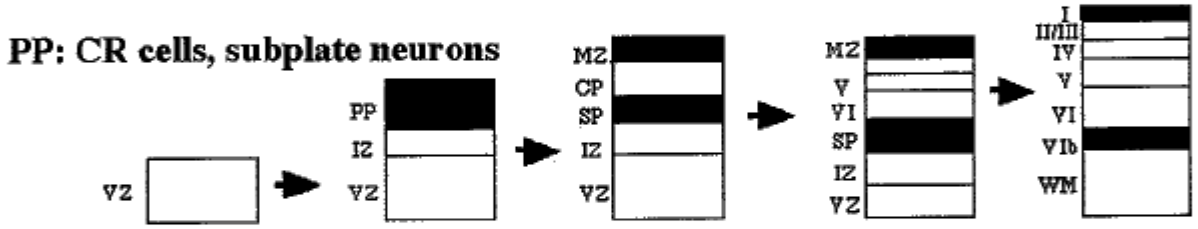
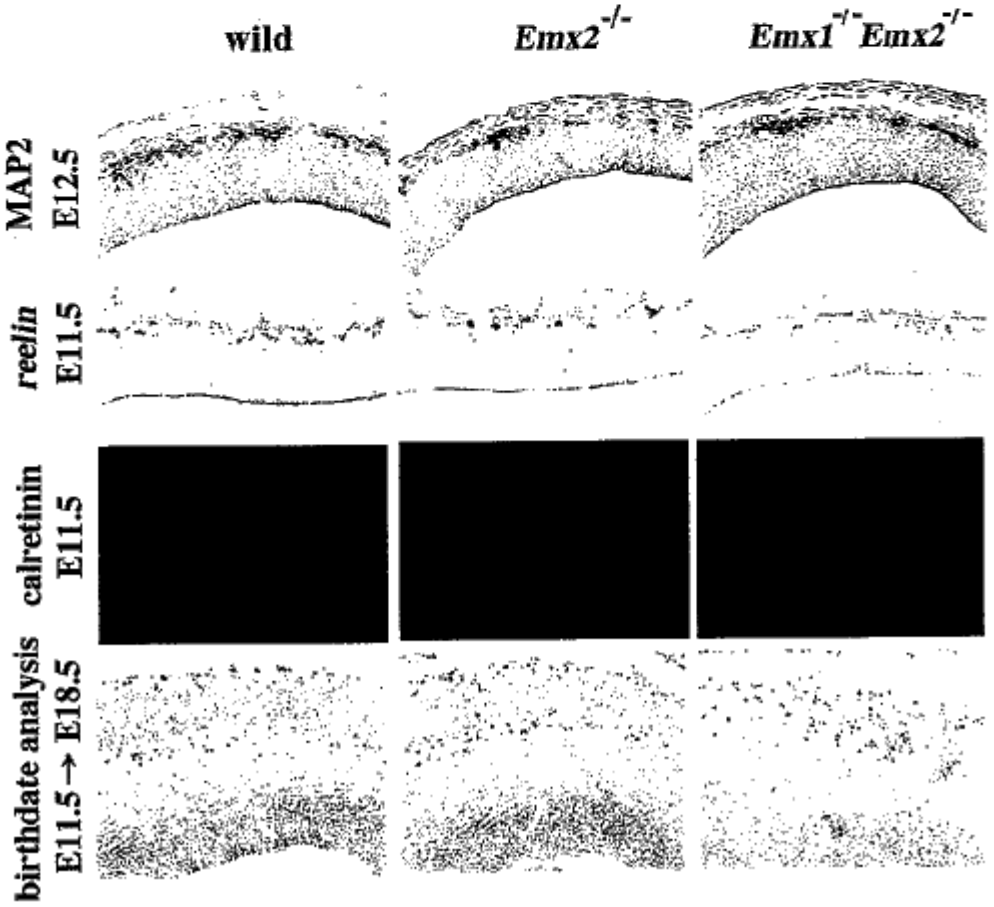


図 7


Archicortex
Neocortex
Cortical Hem
Paleocortex
Choroid plexus
DORSAL TELENCEPHALON
VENTRAL TELENCEPHALON
Lateral Ganglionic Eminence (Striatum)
Medial Ganglionic Eminence (Pallidum)
Olfactory bulb
Archipallium
Basal nuclei
A. Primitive stage
B. Amphibian
C. Primitive reptile
Neopallium
Paleopallium
D. Advanced reptile
Archipallium = hippocampus (on medial surface)
Rhinal fissure
Paleopallium = olfactory lobe
Olfactory bulb
Olfactory (pyriform) lobe
E. Primitive mammal
F. Advanced mammal
Model 1
Model 2
Model 3
p5/p6
p4/p5
SE
hc
cp
lt


PP: CR cells, subplate neurons
VZ
PP
IZ
MZ
CP
SP
V
VI
VIb
WM
I
II/III
IV


wild
Emx2-/-
Emx1-/-Emx2-/-
MAP2 E12.5
reelin E11.5
calretinin E11.5
birthdate analysis E11.5 → E18.5